

Work Order ID 74922

October 13, 2011 1:01:41 PM

74922

Page 1

Item ID: D205-634-041

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Item Name: Replacement Skidtube

Stop ***NS2***

Start Date: 10/13/11 Start Qty: 1.00

1

Cust Item ID:

Required Date: 10/27/11 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: M.L.J

Date: 11/10/13

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D2580-041	Rev.E								

100

0.00

100

DOCUMENT CONTROL

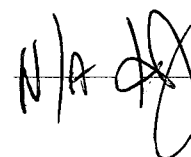
DC

Memo

0.00

Document Control

Photocopy D205-634 bluefile & type labels per PPP D205-634-041 CHG002

N/A 

110

0.00

110

BENDING MACHINE - SKIDTUBES

CNC Bend 1

Memo

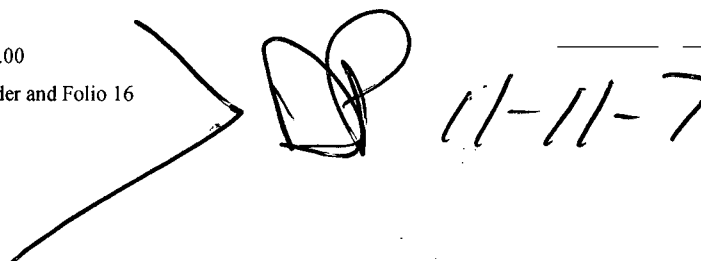
0.00

CNC Delta 100 Bender

1-Bend as per program D2580.C on CNC Bender and Folio 16

2-Cut tubes as per Dwg. D2580

3- scribe batch# in aft end of tube



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120		0.00							
120									
Skidtubes	Memo	0.00							
Skidtubes	1- Deburr ends and remove bending marks								
	2- Prepare tube for welding as per QSI 004								
130	QC5- Inspect part completeness to step on W/O	0.00							
130									
QC	Memo	0.00							
Quality Control									

SAO 11-11-07

①

1 2 BE 11/11/14

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

140

0.00

140

Skidtubes

Skidtubes

Memo

0.00

1-Weld step D2576 as per Dwg. D2580 and QSI 004
A/R Aluminum Rod *MI18735**BE 11/11/14*

2-Grind welds on step as per Dwg D2580

3-Weld spacers as per dwg D2580

*AK MI18735**BE 11/11/14*3- *** N/A**** Insert D4202-1 spacer, swage as per QSI002 and trim/ grind
flush per QSI002 and dwg. Hold x-bolt with DT9701 Use tube expander 1/2
x17G to start expansion and finish with 1/2 x 18G to achieve dwg dimension.4-Drill holes for wearplates using DT 8217 & DT8937 Open holes to 19/64",
adjust stopper not to hit web. Debur*BE 11-11-14*

6-Drill pilot holes for aft cap using DT 8215 Open holes to 0.208". Debur

7-Drill pilot holes for Tow ring using DT8091, open to .640" and Debur

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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150 *150* QC Quality Control	QC10- Inspect visual per QSI004- ground welds Memo	0.00 0.00		S u/11/14					
160 *160* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00		S u/11/14		(u)			
170 *170* HandFinish Hand Finishing	Pressure Wash per QSI005 4.3 Memo Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch and leave fwd cap out of solution.	0.00 0.00							12/8/11/14

W/O:		WORK ORDER CHANGES					
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Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
180									
Powdercoat	Memo	0.00							
Powder Coating	START TIME: 9:30								
	OVEN TEMPERATURE: 320 OF								
	FINISH TIME: 10:00								
190	QC3- Inspect Part Finish	0.00							
190									
QC	Memo	0.00							
Quality Control									

Handwritten: 12/11/15

Handwritten: M118439

Handwritten: 1 BR 11-11-15.

W/O:		WORK ORDER CHANGES					
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Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

200

0.00

200

HandFinish

0.00

Hand Finishing

Memo

1-Install inserts & wearplates & Gaskets as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates
A/R Sikaflex-291 11/9/11
Sikaflex expire date: 12-1

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580

3-Inspect for foreign object per QSI 024

4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive
A/R Sikaflex-291 11/9/11
Sikaflex expire date: 12-1

5-Wing Walk as per Dwg D2580 and QSI 005 4.4
Batch: 118988

1 BR 11-11-15.

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1

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Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

210

QC5- Inspect part completeness to step on W/O

0.00

210

QC

Memo

0.00

Quality Control

Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024

11-11-15 (1)

220

Packaging

0.00

220

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPPD205-634-041

Location: _____

PPP Rev: _____

PP 75346

11/16/15

230

QC21- Final Inspection - Work Order Release

0.00

230

QC

Memo

0.00

Quality Control

11/16/15

11-11-18

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Picklist Print

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Page 1

Work Order ID: 74922

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Parent Item: D205-634-041

D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 10/13/11

Required Date: 10/27/11

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30
KJ IPP Rev P 10.02.19
per PAR09-043 EC verified by:DD
IPP Rev. O 06.02.28 Added paperwork EC
IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM IPP Rev:Q
10.12.01 as per chg003 DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D4202-1	D2579	Manufactured	No			140	Each	492.0000	20	20			
---------	--------------	--------------	----	--	--	-----	------	----------	----	----	--	--	--

D4202-1

Spacer

**

BE 11-11-14
*B76002 *20*

Location	Loc Qty	Loc Code
LG002	492	
66929	106	
67129	196	
67308	1	
67430	140	
72639	49	

D2580-1		Manufactured	No			110	Each	1.0000	1	1			
---------	--	--------------	----	--	--	-----	------	--------	---	---	--	--	--

D2580-1

205 Skidtube bent detail

**

Location	Loc Qty	Loc Code
LG 75282	1	
72965	1	

D2576-3		Manufactured	No			140	Each	69.0000	1	1			
---------	--	--------------	----	--	--	-----	------	---------	---	---	--	--	--

D2576-3

Step (maching detail)

**

Location	Loc Qty	Loc Code
LG	69	
66156	19	
70883	50	

DP 11-11-7

BE 11-11-14

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 10/13/11

Required Date: 10/27/11

Start Qty: 1.00

Required Qty: 1.00

D2855 Manufactured No 200 Each 18.0000 1 1

D2855

Cap

**

BR 11-11-15.

Location Loc Qty Loc Code

FP007 18
65519 2
65569 16

AN3-5A Purchased No 200 Each 874.0000 2 2

AN3-5A

Bolt

**

BR 11-11-15.

Location Loc Qty Loc Code

ST350 874
115371 46
117423 528
118626 300

AN960JD10L **NAS1149D03321* Purchased No 200 Each 0.0000 2 2

AN960JD10L

Washer

**

BR 11-11-15.

ALS7-1032-130 Purchased No 200 Each 1,099.000 50 50

ALS7-1032-130

Insert

**

BR 11-11-15.

Location Loc Qty Loc Code

ST281 922
118966 922
ST282 177
117717 31
118386 146

50.

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 10/13/11

Required Date: 10/27/11

Start Qty: 1.00

Required Qty: 1.00

AN3C4A	Purchased	No	200	Each	1,987.000	50	50
--------	-----------	----	-----	------	-----------	----	----

AN3C4A

BOLT

**

BR 11-11-15.

Location	Loc Qty	Loc Code
ST350	1987	
117313	2	
117688	5	
117872	22	
118112	16	
118451	442	
118706	500	
118838	1000	

AN960C10L	NAS1149C0332	Purchased	No
	R		

*AN960C10I *

washer

D3566-13

Manufactured No

200	Each	0.0000	50	50
-----	------	--------	----	----

**

50. BR 11-11-15.

D3566-13

Gasket

**

BR 11-11-15.

Location	Loc Qty	Loc Code
FP	29	
73322	29	
FP014	11	
68341	1	
72149	10	

W/O:		WORK ORDER CHANGES					
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D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 10/13/11

Required Date: 10/27/11

Start Qty: 1.00

Required Qty: 1.00

D3566-5

Manufactured No

200

Each

18.0000

1

1

D3566-5

Gasket

**

BL 11-11-15

Location

Loc Qty

Loc Code

FP002

12

74387 ✓

12

FP015

6

72849

6

D3566-1

Manufactured No

200

Each

53.0000

2

2

D3566-1

Gasket

**

BL 11-11-15

Location

Loc Qty

Loc Code

FP002

51

73303 ✓

25

74518 ✓

26

FP015

2

68924

2

D3564-11

Manufactured No

200

Each

13.0000

1

1

D3564-11

Wearshoe

**

BL 11-11-15

Location

Loc Qty

Loc Code

FP019

11

73146 ✓

11

FP020

2

72207

2

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Required Date: 10/27/11

Start Qty: 1.00

Required Qty: 1.00

D3564-13

Manufactured No

200

Each

26.0000

1

1

D3564-13

Wearshoe

**

BR 11-11-15.

Location

Loc Qty

Loc Code

FP001

25

72850 ✓

7

73323 ✓

18

FP017

1

71594

1

D3564-9

Manufactured No

200

Each

24.0000

1

1

D3564-9

Wearshoe

**

BR 11-11-15.

Location

Loc Qty

Loc Code

FP

19

73345 ✓

19

FP019

5

67590

4

69943

1

D3564-5

Manufactured No

200

Each

20.0000

1

1

D3564-5

Wearshoe

**

BR 11-11-15.

Location

Loc Qty

Loc Code

FG

2

34806

2

FP19

18

73330 ✓

18

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Parent Item Name: Replacement Skidtube

Start Date: 10/13/11

Required Date: 10/27/11

Start Qty: 1.00

Required Qty: 1.00

D2594-3

Manufactured No

200

Each

884.0000

16

16

D2594-3

O-Ring, 205 Skidtube

**

BR 11-11-15

Location

Loc Qty

Loc Code

FP004

198

73490

198

FP-A

686

65518

41

66952 ✓

347

73490

298

18

D2594-1

Manufactured No

200

Each

500.0000

16

16

D2594-1

Plug, 205 Skidtube

**

BR 11-11-15

Location

Loc Qty

Loc Code

FP

172

73401 ✓

172

FP-A

328

42807

28

67441

7

72127

47

16

W/O:		WORK ORDER CHANGES					
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LIST OF MATERIALS					
ITEM	QTY -041	QTY -045	QTY -047	PART NUMBER	DESCRIPTION
1	X			D2580-041	SKIDTUBE ASSEMBLY
2		X		D2580-045	SKIDTUBE ASSEMBLY
3			X	D2580-047	SKIDTUBE ASSEMBLY
4	1	1	1	D2500-1-190	EXTRUSION
5			16	D2570	BUSHING
6	1	1	1	D2576-3	STEP
7	20	24	25	D2579	SPACER
8	16	16	8	D2594-1	PLUG
9	16	16	8	D2594-3	O-RING
10	1	1	1	D2596	205 WEB
11	1	1	1	D2855	AFT CAP
12	1	1		D3564-5	WEARSHOE
13	1	1		D3564-9	WEARSHOE
14	1	1		D3564-11	WEARSHOE
15	1	1		D3564-13	WEARSHOE
16	2	2		D3566-1	GASKET
17	1	1		D3566-5	GASKET
18	1	1		D3566-13	GASKET
19			1	D4406-041	WEARPLATE ASSEMBLY
20			1	D4406-043	WEARPLATE ASSEMBLY
21	50	50		ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130	INSERT
22	50	50		AN3C4A	BOLT
23	2	2	2	AN3-5A	BOLT
24			8	AN4-45A	BOLT
25	50	50		NAS1149C0332R	WASHER (AN960C10L)
26	2	2	2	NAS1149D0332J	WASHER (AN960JD10L)
27			8	MS21042-4	NUT (OR MS21042L4)

GENERAL NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB
POWDER COAT ASSEMBLY (-041/-047) GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
POWDER COAT ASSEMBLY (-045) GREEN SANDEX (REF 4.3.5.8) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4.
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D2580-041 = 34.5 lbs
D2580-045 = 34.5 lbs
D2580-047 = 37.7 lbs
- 8) WELDING PER DART QSI 004.
- 9) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 10) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 11) USE DART DRILL TEMPLATE DT8217 & DT8937 ONLY FOR D2580-041/-045 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTIONS B-B AND F-F (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND NAS1149C0332R WASHERS WITH SIKAFLEX-241/-291.
- 12) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES FOR D2580-041/-045 AND 8 PLACES FOR D2580-047)
- 13) IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

RELEASED
2011-08-29

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WITHOUT NOTICE
WORK ORDER

NO. 74922 M.L.J
11/10/11

E	ADD D2580-047 (ZN C4-7) AND D2580-7 (ZN B3-8); INCLUDED DEO D2580-D-1; REFORMATTED DRAWING TO CURRENT STANDARDS; DT8217 & DT8937 WAS TD2577-205 (ZN C4-1)	RF	11.06.21
D	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/ 9183	PH	07.04.05
C	REDRAWN, INCLUDED DEO 9094/ 9097	CP	98.08.26
B	AS MANUFACTURED	DS	96.12.02
A	NEW ISSUE	DS	96.09.16
REV.	DESCRIPTION	BY	DATE
DESIGN	#		
DRAWN	RF		
CHECKED	MP		
MFG. APPR.	DS		
APPROVED	MP		
DE APPR.	MP		
DATE	11.06.21		

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D2580	REV. E SHEET 1 OF 8
TITLE 205 SKIDTUBE ASSEMBLY	SCALE NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

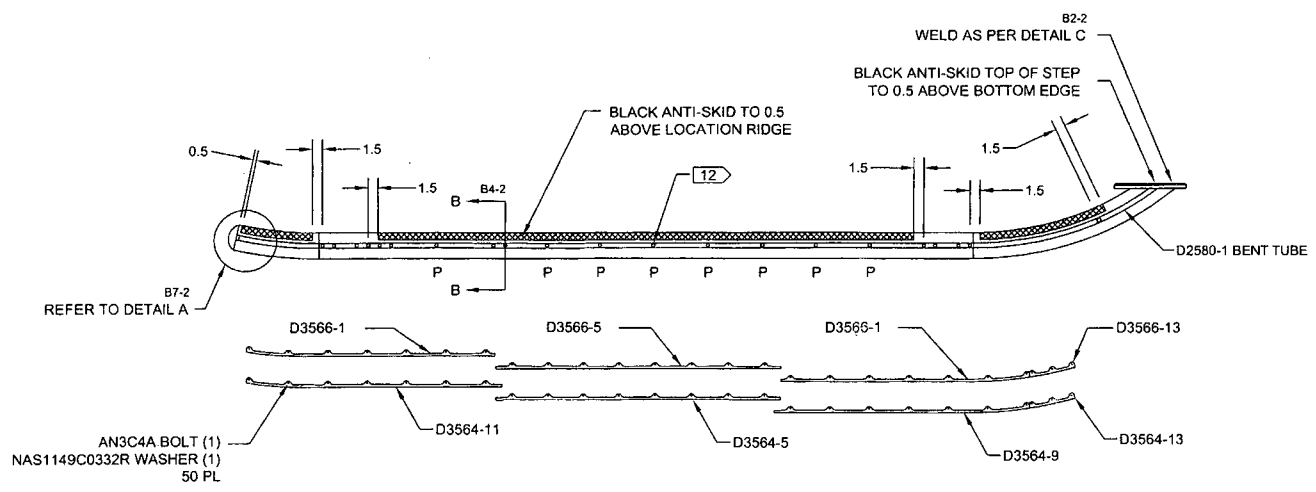
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

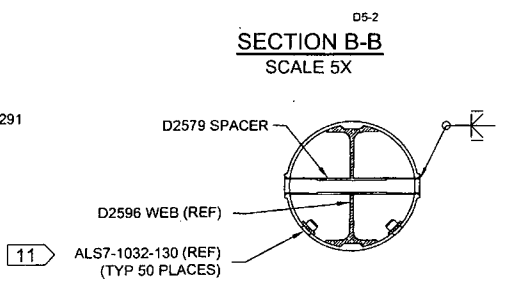
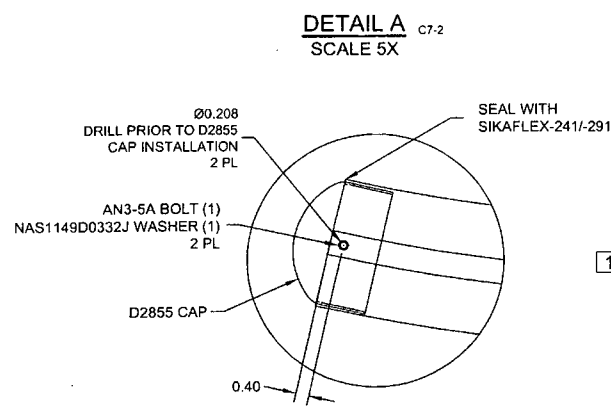
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

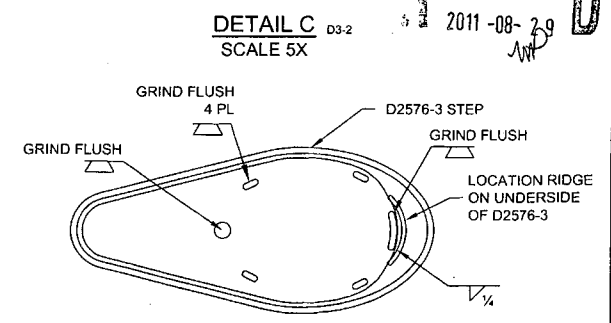
749 22



D2580-041 ASSEMBLY DETAIL



AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (20 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP



DESIGN	#	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF	DRAWING NO.	REV. E
CHECKED	10	D2580	SHEET 2 OF 8
MFG. APPR.	10	TITLE	SCALE
APPROVED	10	205 SKIDTUBE ASSEMBLY	NTS
DE APPR.	10	COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
DATE	11.06.21		

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

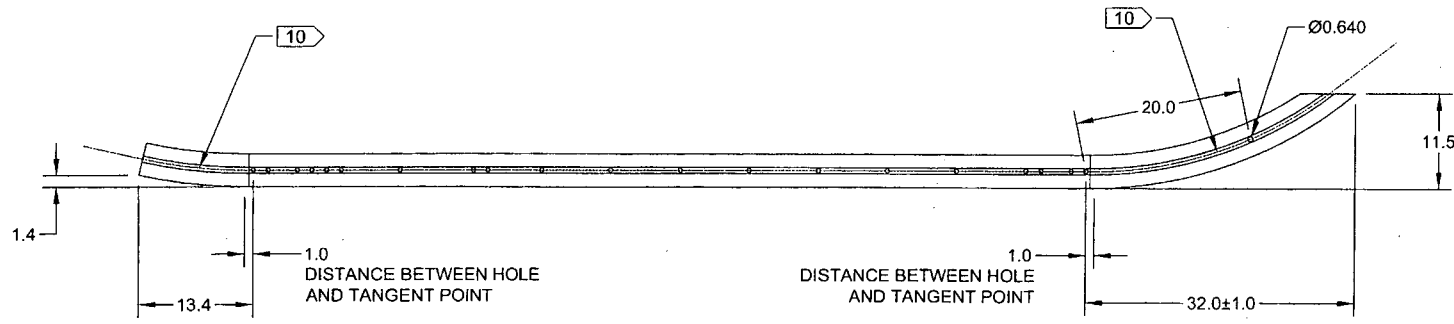
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

24289
74922



D2580-1 BENT TUBE
(MAKE FROM D2580-101 TUBE)

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2011-08-28

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	RF	DRAWING NO. D2580	REV. E
MFG. APPR.	RF	TITLE	SCALE
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

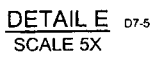
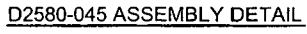
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

A horizontal number line with tick marks labeled 1 through 8 from right to left. The line is divided into 7 equal segments by 8 tick marks.



DESIGN	#	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>RF</i>	DRAWING NO.	REV. E
MFG. APPR.	<i>RF</i>	D2580	SHEET 4 OF 8
APPROVED	<i>RF</i>	TITLE	SCALE
DE APPR.	#	205 SKIDTUBE ASSEMBLY	NTS
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

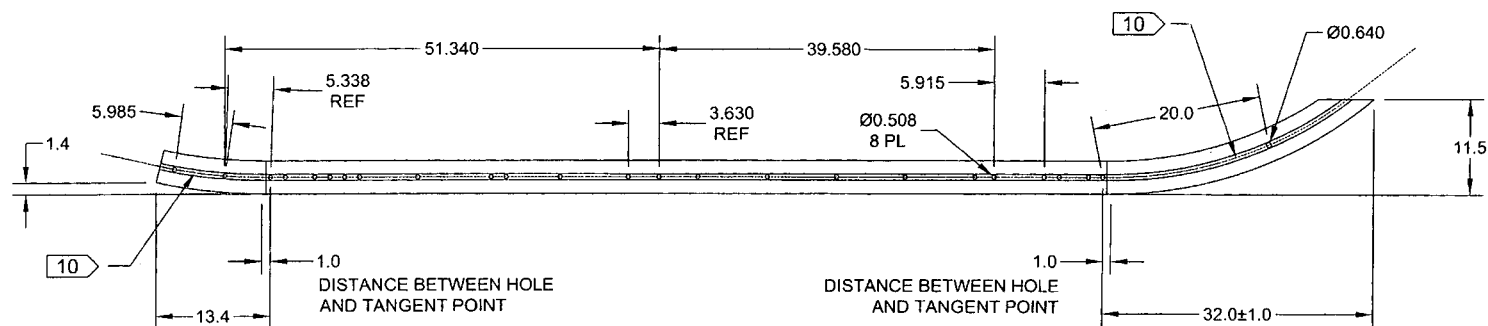
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

24829
749.22



D2580-5 BENT TUBE
(MAKE FROM D2580-101 TUBE)

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2011-08-29
AND

DESIGN	#	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
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MFG. APPR.	AS	D2580	SHEET 5 OF 8
APPROVED	AP	TITLE	SCALE
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

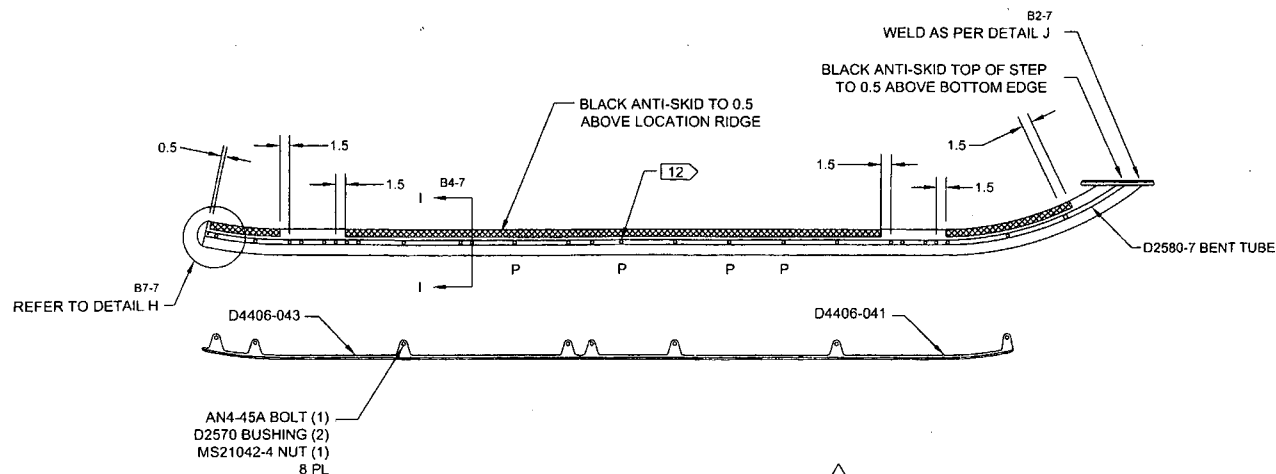
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

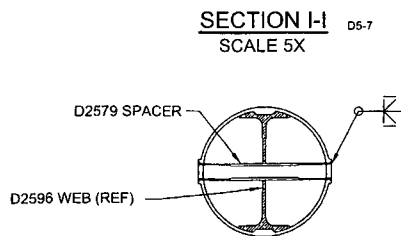
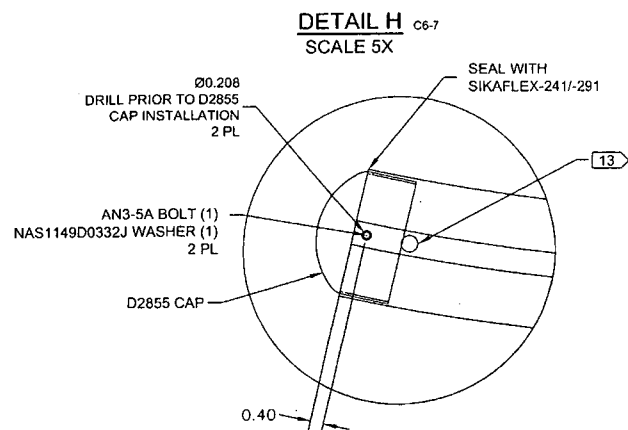
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

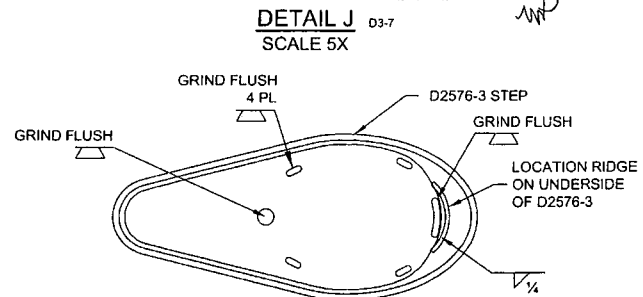
74922



D2580-047 ASSEMBLY DETAIL E



AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (25 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP



DESIGN	#	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
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MFG. APPR.	10	D2580	SHEET 6 OF 8
APPROVED	10	TITLE	SCALE
DE APPR.	10	205 SKIDTUBE ASSEMBLY	NTS
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

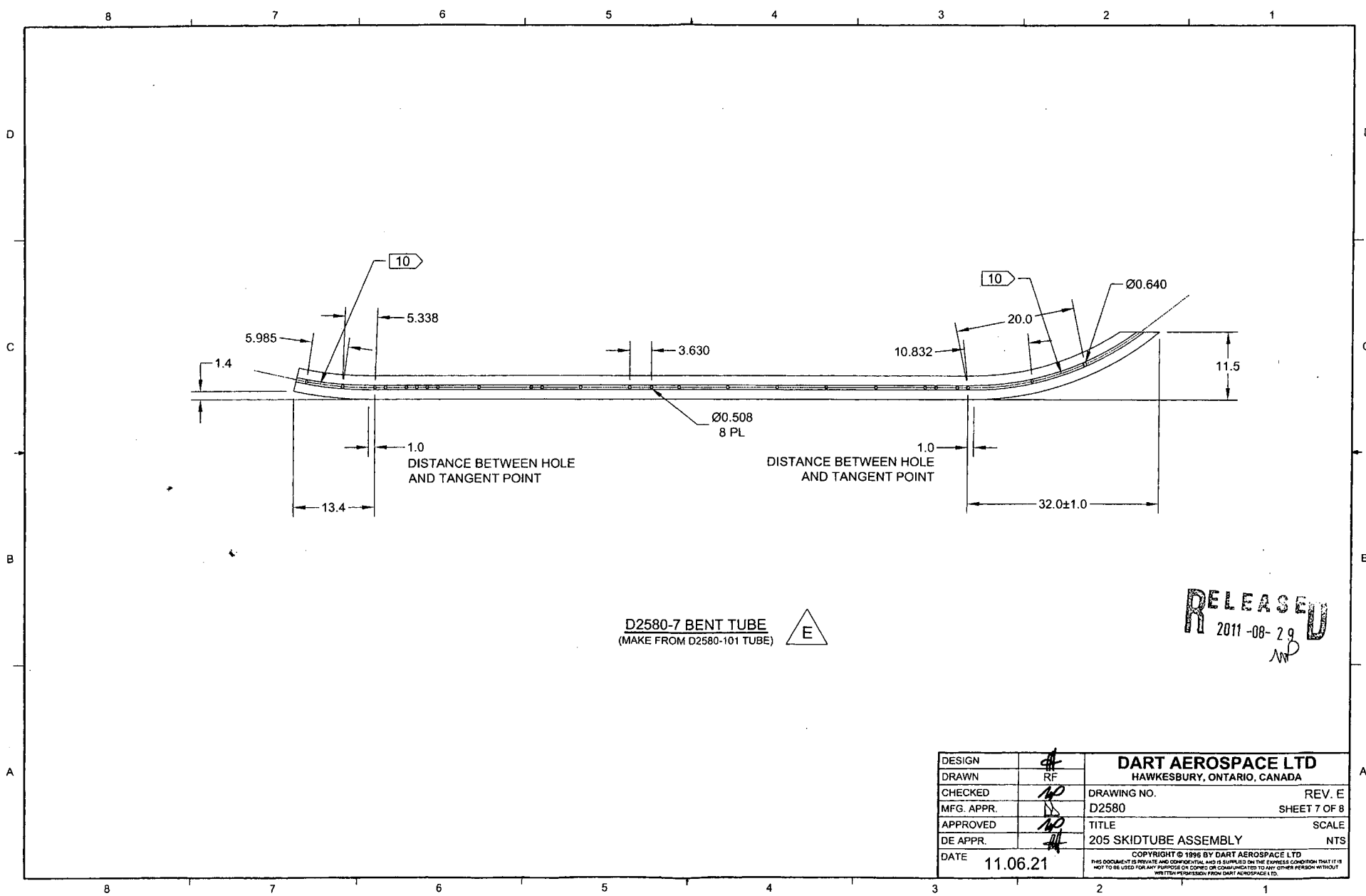
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

74922



D2580-7 BENT TUBE
(MAKE FROM D2580-101 TUBE)



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2011-08-29

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	RF	DRAWING NO. D2580	REV. E
MFG. APPR.	RF	SHEET 7 OF 8	
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

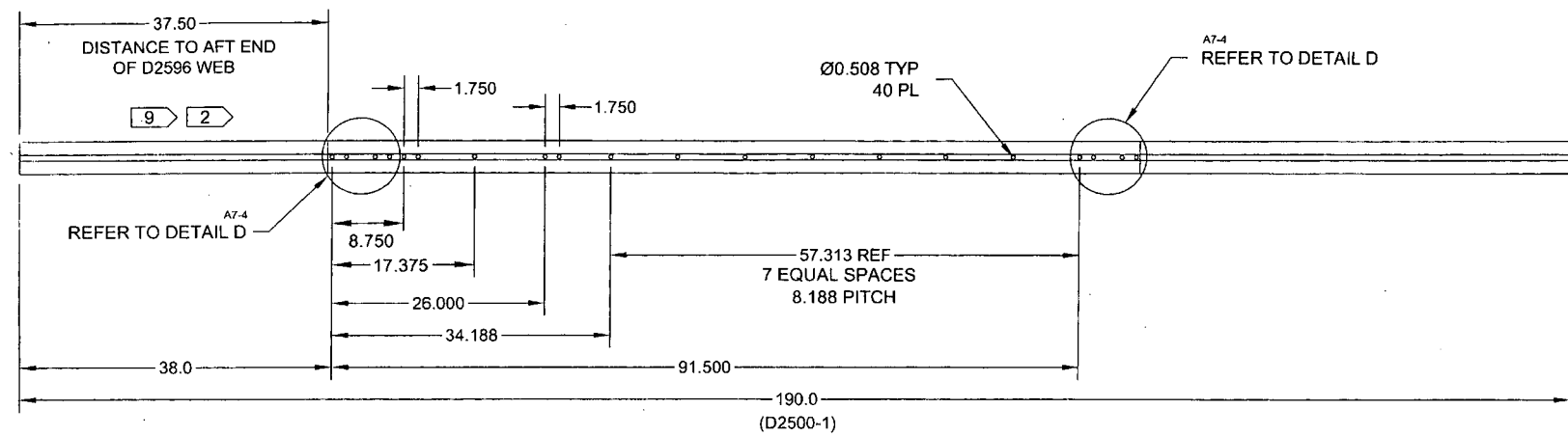
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

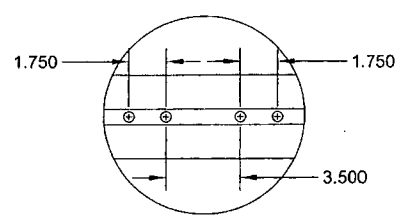
NOTE: Date & initial all entries

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D2580-101 TUBE



DETAIL D D3-4
SCALE 5X C7-4

RELEASED
R 2011-08-29

DESIGN	<i>Handwritten:</i> RF	DART AEROSPACE LTD	
DRAWN	<i>Handwritten:</i> RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>Handwritten:</i> RF	DRAWING NO. D2580	REV. E
MFG. APPR.	<i>Handwritten:</i> RF	TITLE	SHEET 8 OF 8
DE APPR.	<i>Handwritten:</i> RF	205 SKIDTUBE ASSEMBLY	SCALE NTS
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W/O:		WORK ORDER CHANGES					
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 271

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 72859
Part number: 1 205 - 634 - 041
Description: 205 Skid tube
Welding Process: Tig[☒] Mig[]
Base material: Aluminium
Current: AC[☒] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[]
Penetration: pass[☒] fail[]

UNACCEPTABLE

Cracks: pass[☒] fail[]
Undercut: pass[☒] fail[]
Pin holes: pass[☒] fail[]
Overlap (cold lap): pass[☒] fail[]
Porosity (surface): pass[☒] fail[]
Coloration: pass[☒] fail[]

Qualifier Pat Dunn Date of Test Coupon 11-10-12
Welder Barclay Elliott Date of Test Coupon 11-10-12

The above named individual is qualified in accordance with AWS D17.1.2001 to weld